

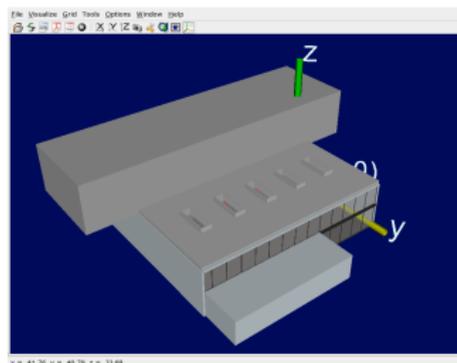
RadView: OpenGL Viewer for Radiance Scenes

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Motivation



- Quick overview of complex scenes
- Easy edit-view-edit cycles
- Interactive views
- visualisation of simulation results at grid points (daylight factor)
- Should run under Linux, MacOS and Windows
- rshow

Main Window

Tree view

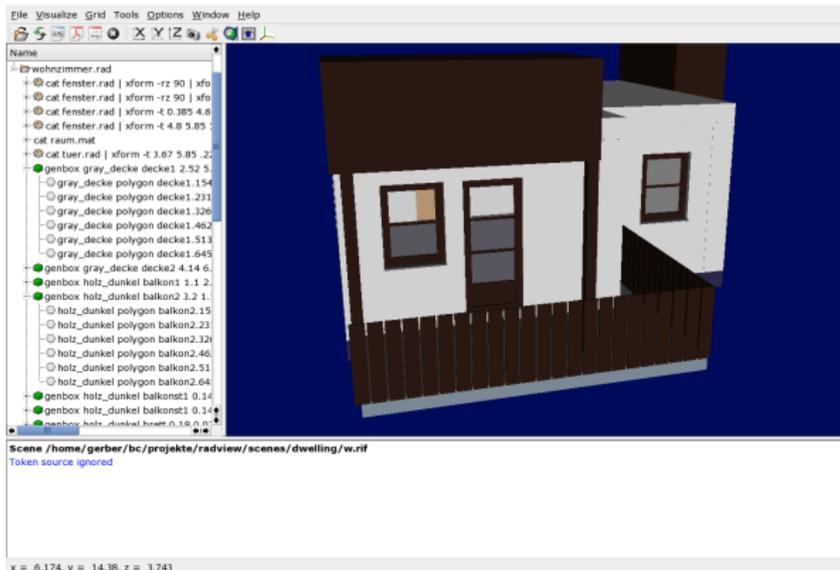
The scene as a tree of files generators and modifiers

Render window

Use the mouse to locate the camera

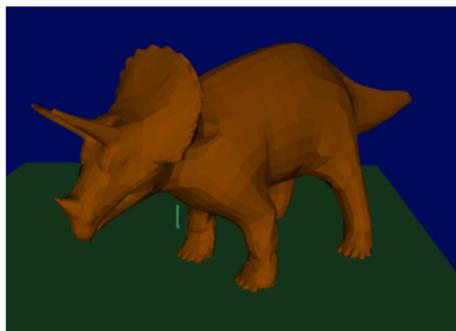
Log view

Informations, warnings and errors



Supported Radiance primitives

Geometry



- all except source
- including mesh
- rad \rightarrow mesh by vtk exporter

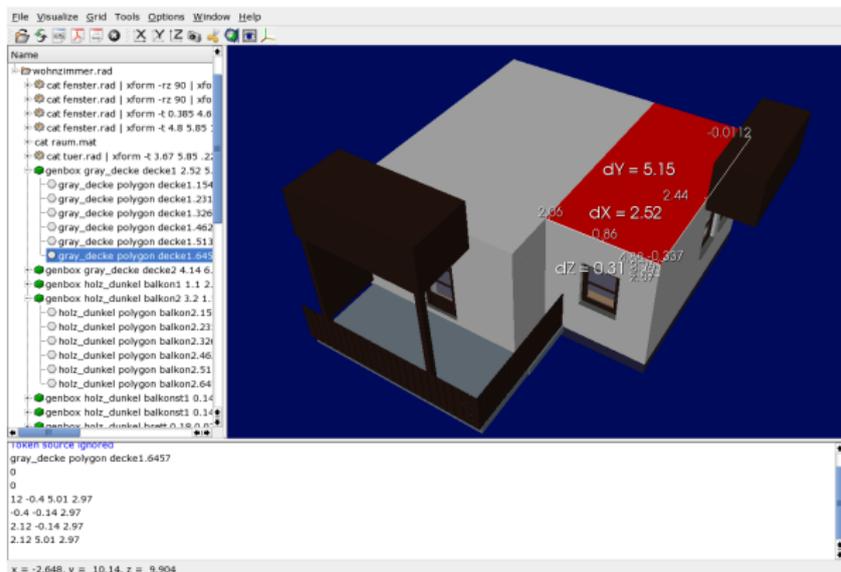
Materials

- plastic
- transparent materials
- colorpict (some cases)

Selection of elements

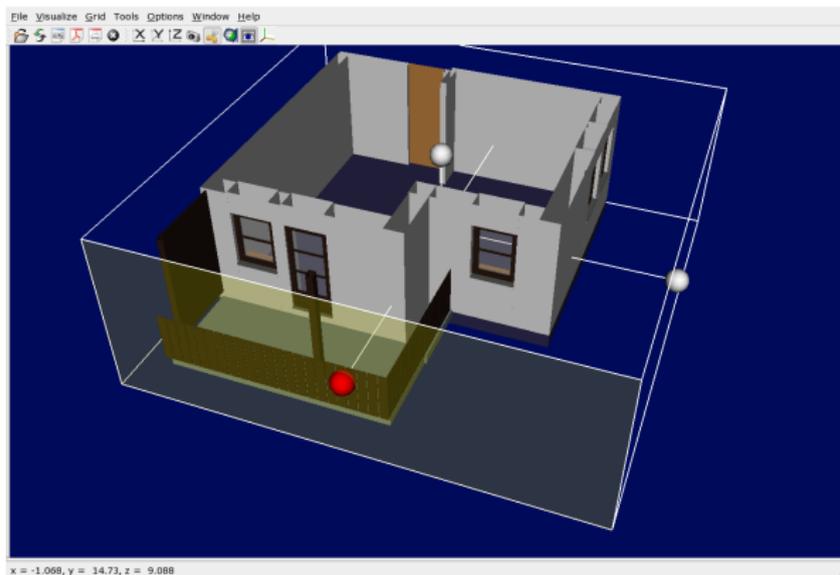
Selection of individual elements by

- picking in the render window
- highlighting items in the tree view



Clipping the scene

Specifying clipping planes
by using a box widget
Toggling between clipped
and unclipped view



Grid Generation

Polygons

One or more polygons can be selected for grid generation

Options

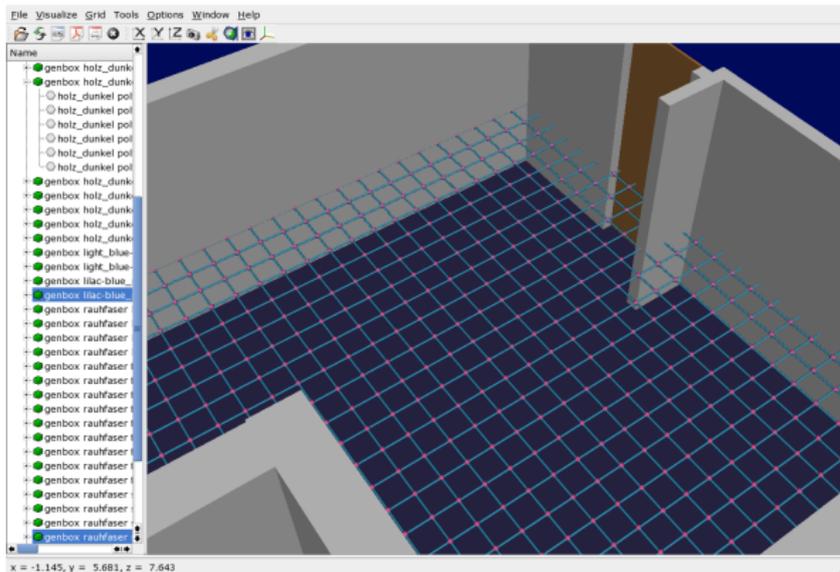
Options

grid spacing ():

distance from boundary ():

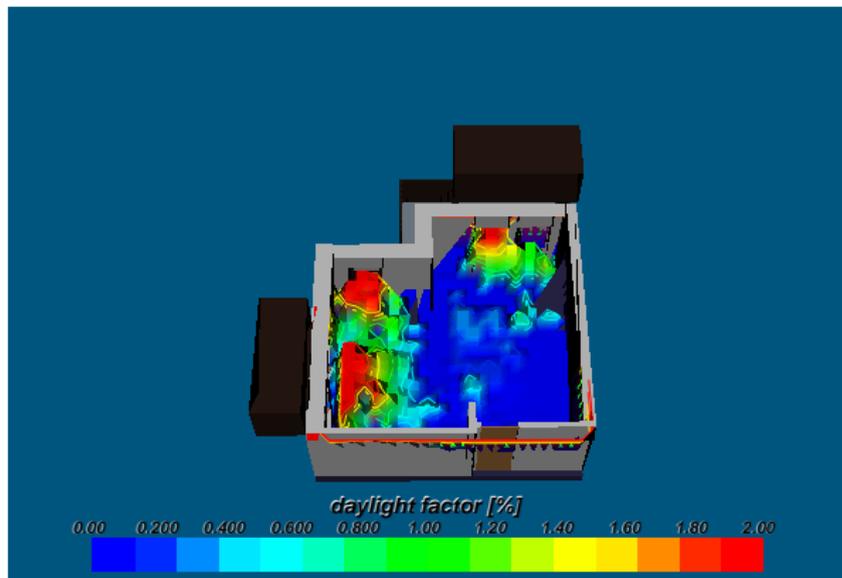
distance to plane ():

normal vector ():



Extending

RadView can serve as a GUI for special tasks as shown for daylight factor calculation



Software Packages used for Development of RadView



RadView is written in Python www.python.org



VTK is used for rendering and visualisation
<http://www.vtk.org>



Qt for the GUI
(Python bindings by Phil Thompson
www.riverbankcomputing.co.uk)

Polygon

Polygon clipping library by Alan Murta
Python bindings by Jörg Rädler
www.dezentral.de

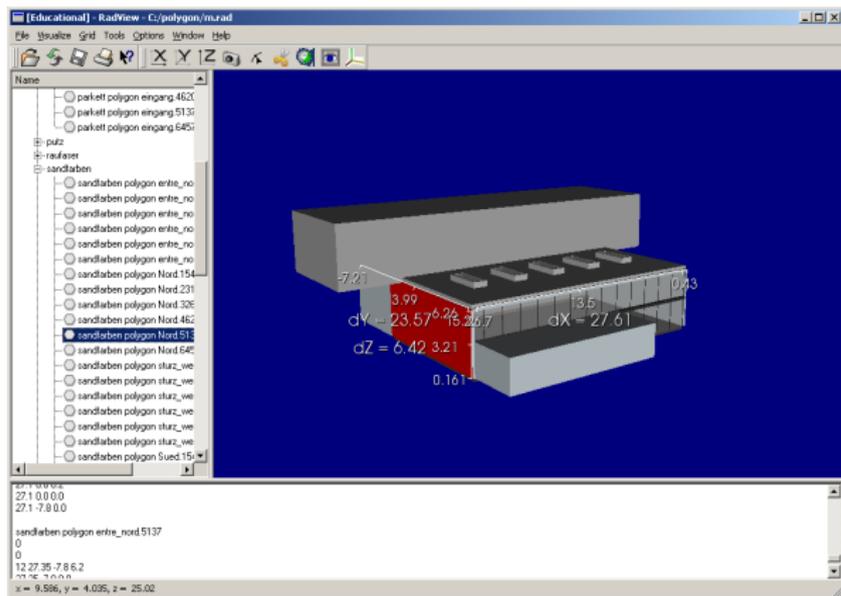
Supported Operating Systems

RadView runs on Linux and Windows and possibly on MacOS (X)

- Python, VTK and PyQt are available for all of the target OSs
- Development Platform is Linux
- Minor dependences are expected:
 - handling of files and directories
 - process management
- Since RadView is free software no special licenses are required for Linux an MacOS
- a commercial licence of Qt/PyQt is requierd for Windows

RadView on the windows operating system

Entought Python is a good starting point – it comes with VTK



Future Work

- dialog for camera settings
- Animation path's
- better camera support
 - fisheye views
 - dialog for clipping planes and view angle
- Better support for materials
- Speed improvements by reimplementing parts of the code in C
- fixing bugs